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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## ZINC IN DECEMBER 1996

After 4 consecutive months of decline, domestic mine output took an upturn at the end of 1996. December production increased by nearly 5% over the previous month's production but was still about 11% lower than production in December 1995. Smelter production showed a nearly 4% decrease below that of November, but was 2% above production in December 1995. Apparent consumption increased by nearly 3% over the previous month's consumption and about 19% over that of December 1995.

After 5 months of consecutive monthly increases, the *Platt's Metals Week* composite price for North American Special High Grade zinc for December declined by 1%, but still was nearly 4% higher than a year before.

Chief Consolidated Mining Co. (50%), Korea Zinc Co. Ltd. (25%), and Akiko Gold Resources Ltd. (25%) formed a limited liability company named Tintic Utah Metals LLC, to develop the now closed New Burgin Mine and explore the surrounding area. Thyssen Mining Construction of Canada, Ltd., the North American subsidiary of Thyssen Schachtbau GmbH of Germany, was contracted to conduct preliminary engineering design and budgeting for shaft sinking, underground development, and contract mining. Definition drilling reportedly resulted in the discovery of 1.5 million tons of reserves averaging 6.7% zinc, plus lead and silver.<sup>1</sup>

Closure of the mill in August, coupled with depressed metal prices and high treatment charges, had convinced ASARCO Incorporated to close its Leadville Mine by the end of 1996. By December 12th, it had reconsidered its recent decision, because of the impact on the community, and decided to resume mining operations early in 1997. Restart of operations will be phased in during January with resumption of full employment at the mine by February 1. Full production of 14,000 tons of zinc in

concentrate per year is expected to be resumed by mid-March.<sup>2</sup>

On December 20, 1996, Anvil Range Mining Corp. suspended mining activities at its Faro lead-zinc mine, Yukon Territory, Canada, owing to production problems, weak metal prices, and a strengthening Canadian dollar. The grade of the ore fed to the mill slipped from about 8% during the year to 7.2% in October and 6.7% in November. Delays in maintenance caused an 11% drop in output. For the first 3 months of 1997, Anvil Range will continue to treat the stockpiled low-grade ore at 50% capacity and then make a decision whether to resume mining operations. Prior to closure, planned production for 1997 was 170,000 tons of zinc in concentrate.<sup>3</sup>

Montreal-based Cambior Inc. has suspended production at its Gonzague-Langlois Mine near Lebel-sur-Quévillon, Quebec, because of low metal prices and the need to modify the mining method in certain parts of the deposit. The company expects to restart operations in the second half of 1997. Proven and probable reserves are said to amount to 11 million tons grading 8.41% zinc, as well as copper, gold, and silver. On an annual basis, the mine is to produce 62,000 tons of zinc in concentrate. At that rate of production, mine life is expected to be at least 12 years.<sup>4</sup>

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<sup>1</sup>The Mining Record. Synopsis. V. 107, No. 49, Dec. 4, 1996, p. 21.

<sup>2</sup>Platt's Metals Week. Asarco Reverses Leadville Mine Shutdown Decision. Dec. 16, 1996, p. 1.

<sup>3</sup>The Northern Miner. Mothballed Faro Seen as a Victim of Murphy's Law. V. 82, No. 40, Dec. 2, 1996, p. 1.

<sup>4</sup>The Northern Miner. Cambior Suspends Zinc Operations. V. 82, No. 41, Dec. 9, 1996, p. 3.

TABLE 1  
SALIENT ZINC STATISTICS 1/

(Metric tons)

	1995		1996			
	December	Jan.-Dec.	October	November	December	Jan.-Dec. p/
Production:						
Mine, recoverable zinc	48,100	614,000 r/	46,000	40,800 r/	42,800	575,000
Smelter, refined zinc	30,000	363,000	32,300	32,000	30,600	366,000
Oxide, (gross weight)	10,900	130,000	11,100	11,100 r/	11,300	129,000
Consumption:						
Refined zinc, reported	54,500 r/	838,000 r/	56,300 r/	54,300 r/	53,500	661,000
Ores e/ 2/	138 r/	1,650 r/	150 r/	150 r/	150	1,800
Zinc-base scrap e/ 2/	8,100 r/	96,700 r/	8,300 r/	8,300 r/	8,300	100,000
Copper-base scrap e/ 2/	14,000 r/	170,000 r/	14,000 r/	14,000 r/	14,000	170,000
Aluminum-and magnesium-base scrap e/ 2/	66 r/	790 r/	67 r/	67 r/	67	800
Total e/	76,800 r/	1,110,000 r/	78,800 r/	76,800 r/	75,900	934,000
Apparent consumption, metal 3/	94,300 r/	1,240,000	107,000 r/	109,000 r/	112,000	1,210,000
Stocks of slab zinc, end of period:						
Producer 4/	7,120 r/	XX	11,900	14,200	13,800	XX
Consumer 5/	60,400 r/	XX	37,200 r/	37,800 r/	32,700	XX
Merchant	6,440	XX	2,690	4,720 r/	4,800	XX
Total	74,000 r/	XX	51,800 r/	56,800 r/	51,200	XX
Shipments of slab zinc from Government stockpile	80	14,300	5,730	1,920	8,150	28,900
Imports for consumption:						
Slab zinc	64,000	856,000	69,900	79,800	NA	748,000 6/
Oxide (gross weight)	3,530	49,100	4,460	4,560	NA	52,100 6/
Ore and concentrate (zinc content)	--	10,300	264	3,720	NA	12,700 6/
Exports:						
Slab zinc	24	3,080	131	183	NA	1,840 6/
Waste and scrap (zinc content)	5,420	55,900	3,170	3,510	NA	42,100 6/
Ore and concentrate (zinc content)	7,960	424,000	2,820	119,000	NA	380,000 6/
Oxide (gross weight)	386	7,090	431	395	NA	5,360 6/
Price:						
Platt's Metals Week North American Special						
High Grade, average, cents per pound	50.87	55.83	51.52	53.31	52.77	51.11

e/ Estimated. p/ Preliminary. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Recoverable zinc content.

3/ Smelter production + imports - exports + shipments from Government stockpile + beginning stocks - ending stocks.

4/ Data from American Bureau of Metal Statistics and U.S. Geological Survey.

5/ In addition to stocks reported by consumers on a monthly basis, about 10,000 tons was estimated to be held by companies reporting on an annual basis only.

6/ Includes data through November only. December data not available at time of publication.

TABLE 2  
MINE PRODUCTION OF RECOVERABLE ZINC IN THE UNITED STATES 1/

(metric tons)

State	1995		1996 p/			
	December r/	Jan.-Dec.	October	November r/	December	Jan. - Dec.
Alaska	W	321,000	25,300	24,400	26,600	320,000
Other States 2/	48,100	293,000	20,700	16,400	16,200	255,000
Total	48,100	614,000	46,000	40,800	42,800	575,000

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing proprietary data; included with "Other States."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes Colorado, Idaho, Illinois, Missouri, Montana, New York, Tennessee, and State indicated by "W."

TABLE 3  
SLAB ZINC AND ZINC OXIDE 1/ AT DOMESTIC SMELTERS 2/

(metric tons)

Month	Stocks at beginning of month		Production		Shipments		Stocks at end of month	
	Slab zinc 3/	Zinc oxide	Slab zinc	Zinc oxide	Slab zinc	Zinc oxide	Slab zinc 3/	Zinc oxide
1995:								
December	6,300	6,620	30,000	10,900	29,200	10,500	7,120	6,990
Total	XX	XX	363,000	130,000	368,000	130,000	XX	XX
1996: p/								
January	7,120	6,990	31,300	10,700	29,400	12,900	8,990	4,760
February	8,990	4,760	29,400	10,400	29,800	12,000	8,610	3,100
March	8,610	3,100	30,400	12,200	31,100	11,500	7,860	3,740
April	7,860	3,750	29,800	11,400	29,400	11,600	8,280	3,530
May	8,280	3,530	30,500	11,200	30,800	11,400	8,040	3,390
June	8,040	3,390	30,400	10,300	30,300	9,920	8,130	3,800
July	8,130	3,800	30,800	9,100	30,100	9,560	8,830	3,340
August	8,830	3,340	27,400	9,870	26,300	10,200	9,920	3,060
September	9,920	3,060	30,800	10,100	29,700	9,830	11,100	3,210
October	11,100	3,320	32,300	11,100	31,400	11,100	11,900	3,260
November	11,900	3,260	32,000	11,100 r/	29,700	11,100 r/	14,200	3,240 r/
December	14,200	3,240	30,600	11,300	31,100	11,100	13,800	3,500
Total	XX	XX	366,000	129,000	359,000	132,000	XX	XX

p/ Preliminary. r/ Revised. XX Not applicable.

1/ Gross weight; excludes impure zinc oxide produced from other processes.

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Includes stocks held at locations other than smelters.

Sources: American Bureau of Metal Statistics and U.S. Geological Survey.

TABLE 4  
ESTIMATED DISTRIBUTION 1/ OF ZINC OXIDE SHIPMENTS BY INDUSTRY 2/ 3/

(Metric tons, gross weight)

Industry	1995		1996 p/			
	December	Jan. Dec.	October	November	December	Jan.-Dec.
Agriculture	W	W	W	W	W	W
Ceramics	298	3,390	465	435 r/	440	5,690
Chemicals	2,570	30,000	2,460	2,550 r/	2,490	28,800
Paints	469	4,790	322	332 r/	335	4,370
Photocopying	W	W	W	W	W	W
Rubber	6,680	85,300	7,420	7,310 r/	7,340	87,600
Other	512	6,590 r/	454	476	477	5,740
Total	10,500	130,000 r/	11,100	11,100 r/	11,100	132,000

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Distribution of U.S. producers only. Imports excluded because distribution by industry cannot be distinguished.

2/ May include in-house consumption.

3/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 5  
APPARENT CONSUMPTION OF SLAB ZINC ACCORDING TO INDUSTRY USE AND PRODUCT 1/

(metric tons)

Industry and product	1995		1996 p/			
	December r/	Jan.-Dec.	October r/	November r/	December	Jan.-Dec.
Galvanizing:						
Sheet and strip	37,200	490,000	43,600	44,400	46,300	494,000
Other	11,900	168,000	14,400	14,700	15,800	159,000
Total	49,000	658,000	57,900	59,100	62,100	653,000
Brass and bronze	12,200	165,000	13,900	14,800	13,700	157,000
Zinc-base alloy	17,200	250,000	18,900	18,200	17,400	208,000
Other uses 2/	15,900	166,000	16,300	16,900	18,700	192,000
Total apparent consumption	94,300	1,240,000	107,000	109,000	112,000	1,210,000

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes zinc used in making zinc dust, wet batteries, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, zinc oxide, and miscellaneous uses not elsewhere specified.

TABLE 6  
AVERAGE MONTHLY ZINC PRICES

Month	North American Special High Grade, ¢/lb.	LME cash		Sterling exchange rate, \$/£
		¢/lb.	£/m.t.	
1995:				
December	50.87	46.16	660.89	1.540505
Year average	55.83	46.80	656.59	1.572016
1996:				
January	50.59	46.20	666.59	1.528771
February	50.69	46.96	674.37	1.535960
March	51.24	48.24	696.72	1.527062
April	50.61	47.40	689.57	1.516041
May	50.50	46.96	683.57	1.515236
June	49.57	45.72	654.20	1.541590
July	49.87	45.34	643.95	1.553005
August	51.26	45.65	649.68	1.549882
September	51.39	45.35	641.53	1.559290
October	51.52	45.48	632.34	1.586314
November	53.31	47.45	629.52	1.662311
December	52.77	46.98	622.78	1.663933
Year average	51.11	46.52	657.07	1.561616

Source: Platt's Metals Week.

TABLE 7  
U.S. EXPORTS OF ZINC 1/

Material	1995		1996			
	Quantity (metric tons)	Value (thousands)	November		Jan.-Nov. 2/	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Slab zinc	3,080	\$4,340	183	\$225	1,840	\$2,190
Ore and concentrate (zinc content)	424,000	201,000	119,000	54,700	380,000	175,000
Waste and scrap (zinc content)	55,900	36,100	3,510	2,230	42,100	27,800
Powders, flakes, and dust (zinc content)	8,840	15,800	701	1,400	10,400	19,900
Oxide (gross weight)	7,090	9,110	395	525	5,360	8,790
Chloride	1,690	1,250	42	49	1,380	1,140
Sulfate	4,210	2,260	585	333	4,760	2,690
Compounds, other	1,690	4,350	62	254	1,210	4,460

1/ Data are rounded to three significant digits.

2/ December data not available at time of publication.

Source: Bureau of the Census.

TABLE 8  
U.S. IMPORTS FOR CONSUMPTION OF ZINC 1/

Material	1995		1996			
	Quantity (metric tons)	Value (thousands)	November		Jan.-Nov. 2/	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Slab zinc	856,000	\$903,000	79,800	\$84,400	748,000	\$797,000
Ore and concentrate (zinc content)	10,300	4,380	3,720	1,800	12,700	5,430
Waste and scrap (gross weight)	42,300	19,700	3,070	1,050	29,600	12,100
Powders, flakes, and dust (gross weight)	11,700	20,400	875	1,430	9,620	16,600
Oxide (gross weight)	49,100	54,200	4,560	5,010	52,100	53,200
Chloride	2,450	2,370	265	220	2,330	2,060
Sulfate	5,400	3,820	292	201	3,870	2,710
Compounds, other	1,850	2,490	41	65	1,100	1,170
Dross, ashes, and fume (zinc content)	10,900	8,260	1,170	811	14,500	9,980

1/ Data are rounded to three significant digits.

2/ December data not available at time of publication.

Source: Bureau of the Census.

TABLE 9  
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY 1/

(Metric tons)

Material and country	General imports			Imports for consumption		
	1995	1996		1995	1996	
		November	Jan.-Nov. 2/		November	Jan.-Nov. 2/
Ore and concentrate: (zinc content)						
Mexico	7,030	387	4,650	7,030	387	4,610
Peru	5,540	3,420	9,880	3,310	3,340	8,080
Other	463	--	230	15	--	(3/)
Total	13,000	3,810	14,800	10,300	3,720	12,700
Blocks, pigs, or slab:						
Australia	15,400	--	6,970	18,200	--	7,350
Brazil	52,900	5,210	31,700	67,800	5,210	31,700
Canada	468,000	38,200	466,000	469,000	38,200	466,000
Finland	13,500	3,000	14,300	13,500	3,000	14,300
Mexico	99,200	5,920	84,100	99,200	5,920	84,100
Peru	21,500	--	22,600	21,500	--	22,600
Russia	12,800	1,280	18,000	12,800	1,280	18,000
Spain	109,000	14,300	75,200	98,000	14,300	80,500
Other	55,300	12,000	23,300	53,700	12,000	23,300
Total	848,000	79,800	743,000	856,000	79,800	748,000
Dross, ashes, & fume (content)	10,900	1,170	14,500	10,900	1,170	14,500
Grand total	872,000	84,800	772,000	877,000	84,700	775,000
Other (gross weight):						
Waste and scrap	42,300	3,070	29,600	42,300	3,070	29,600
Sheets	332	334	15,600	332	334	15,600
Dust, powder, flakes	11,700	853	9,600	11,700	875	9,620

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ December data not available at time of publication.

3/ Less than ½ unit.

Source: Bureau of the Census.

TABLE 10  
U.S. IMPORTS FOR CONSUMPTION OF ZINC OXIDE, BY COUNTRY 1/

(Metric tons)

Country	1995	1996	
		November	Jan.-Nov. 2/
Canada	24,800	2,310	26,400
China	3,040	(3/)	2,070
Mexico	16,600	1,850	19,700
Other	4,640	398	3,930
Total	49,100	4,560	52,100

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ December data not available at time of publication.

3/ Less than ½ unit.

Source: Bureau of the Census.